Notice of Allowability	Application No. 10/687,159	Applicant(s) CHIDAMBARAN ET AL.	
	Examiner Michael Bernshteyn	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *07/12/2006*.

2. ☒ The allowed claim(s) is/are *1,2,4,6-8,10-14,17-19*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 07/12/2006
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. This Office Action is a response to the remarks filed July 12, 2006. Applicants have amended claims 1, 2, 4, 6, 7, 10, 11, 13, 14, and 17, claims 3, 5, 9, 15 and 16 have been cancelled.

2. Claims 1, 2, 4, 6-8, 10-14 and 17-19 are now pending.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Duane A. Stewart III on September 14, 2006.

4. Claim 17, page 5, line 4, after the words "within a", delete the word "substantially".

Claim 18, page 5, line 1, after the word "said", delete the word "substantially" on the line 2.

Claim 19, page 5, line 1, after the word "said", delete the word "substantially" on the line 2.

Allowable Subject Matter

5. Claims 1, 2, 4, 6-8, 10-14 and 17-19 are allowed.

6. The following is examiner's statement of reasons for allowance:

The present claims are allowable over the closest reference: Osawa et al. (U.S. Patent 6,379,518).

Osawa et al. discloses the electrodeionization apparatus, which has a plurality of cation exchange membranes and plurality of anion exchange membranes alternately arranged between electrodes in such a manner as to alternately form diluting compartments and concentrating compartments. The diluting compartments are filled with an ion exchanger (abstract). The electrodeionization apparatus has an anode, a cathode, concentrating compartments, and diluting compartments, which are formed by arranging a plurality of anion exchange membranes and cation exchange membranes between the anode and cathode, ion exchangers filled in the diluting compartments (col. 3, lines 66-67 through col. 4, lines 1-4). The electrodeionization apparatus efficiently removes the weakly ionized species including silica, boron from the feed water and feed water flows in order (col. 4, lines 9-15).

Osawa discloses that the diluting compartment of the electrodeionization apparatus is preferable to have a thickness of equal to or more than 7 mm, and more preferably 8 to 30 mm. (col. 6, lines 47-49). The ion exchanger filled in the diluting compartments is most preferably the mixture of the anion exchanger and the cation exchanger. When applied with high voltage, the ion exchanger may be anion exchanger alone. Some of the diluting compartments may be filled with the mixture of the ion

exchangers, and others may be filled with the anion exchanger alone (col. 6, lines 53-59). The ion exchange membrane may be either homogeneous or heterogeneous (col. 7, lines 42-44). FIG. 9 is an exploded perspective view showing the structure of a diluting compartment. The diluting compartment comprises a rectangular frame 120, a partition member 121 preferably having conductivity and disposed in the frame 120, an ion exchanger 123 filled in cells 122 formed by the partition member 121, an anion exchange membrane 125 which are disposed to sandwich the frame 120. The partition member 121 may be electrically conductive. The frame 120 is provided with a flow inlet 126 for introducing raw water to be treated and a flow inlet 127 for concentrated water in an upper portion thereof and with a flow outlet 128 for deionized water and a flow outlet 129 for concentrated water formed in an low portion thereof (col. 11, lines 18-29).

However, Osawa et al. does not disclose or fairly suggest the instantly claimed nonporous resin transport framework comprising a cation resin side and an anion resin side, wherein said sides are opposite each other and meet at least two interfaces.

7. As of the date of this Notice of Allowability, the Examiner has not located or identified any reference that can be used singularly or in combination with another reference including Mandeville to render the present invention anticipated or obvious to one of ordinary skill in the art.

8. In the light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delay, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reason for Allowance".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Bernshteyn
Patent Examiner
Art Unit 1713

MB
09/14/2006

LING-SUI CHOI
PRIMARY EXAMINER